

日本産菌草類考察¹⁾ (其四)

今 關 六 也

ROKUYA IMAZEKI: Observations on Japanese Fungi (IV)

21) **Polyporus (Tyromyces) sulphureus** BULLIARD ex FRIES, Syst. Myc., I: 357, 1821; SACCARDO, Syll. Fung., VI: 104, 1888; LLOYD, Syn. Stip. Polyp., 153, 1912; GRAMBERG, Pilz. d. Heim., 3 Aufl. II: Taf. 21 et 53, 1921; REA, Brit. Basid., 581, 1922; BOURDOT et GALZIN, Hym. Fr., 524, 1927; TENG, Sinensia, V: 182, 1934.

Tyromyces sulphureus (BULL. ex FR.) DONK, Rev. d. Niederl. Homobasid.-Aphyllorph., II: 145, 1933.

Polyporus caudicinus SCHAEFFER ex SCHROETER, YASUDA, Tokyo Bot. Mag., XXVIII: 355, 1914.

Polypilus caudicinus SCHAEFF. ex KARSTEN, Bidr. Finl. Nat. o. Folk, XLVIII: 289, 1889.

Laeiporus speciosus BATT. ex MURRILL, Bull. Torr. Bot. Cl., XXXI: 607, 1904; North Am. Fl., IX: 72, 1907.

Habitat: on dead trunks of various frondose trees.

Type of rot: brown rot.

Japanese name: あひかはたけ (間皮たけ—安田).

Distribution: Europe, N. America, and Asia.

Specimens examined:—Karahuto (Aug. 1938-HIDAKA, Z.)—Tisima: Kuna-siri (Aug. 1923-YASUDA, A.)—Hokkaidô: Kusiro prov. (Aug. 1918-YASUDA, A.); Isikari prov. (Sept. 1919-HEMMI, T.)—Honsyû: Miyagi pref. (Oct. 1908-WAKAWA, T., Nov. 1911-YASUDA, A. & Sept. 1920-TOBA, G.); Hukusima pref. (Sept. 1922-NARITA); Totigi pref. (Oct. 1933-IMAZEKI, R.); Gunma pref. (Aug. 1939-IMAZEKI, R., on *Castanea crenata* S. et Z., July 1914-TUNODA, K., July 1917-TUNODA, K. & Nov. 1914-TUNODA, K.); Tôkyô pref. (July 1935-MORI, M.); Nagano pref. (Oct. 1921-TINO, K. & July 1927-MATSUMA, K.); Yamanashi pref. (Aug. 1919-YASUDA, A.); Hyôgo pref. (March 1918-MATUZAWA, S. & July

1) 本研究ハ日本學術振興會ノ補助ニヨルモノナルヲ記シ、感謝ノ意ヲ表スル。

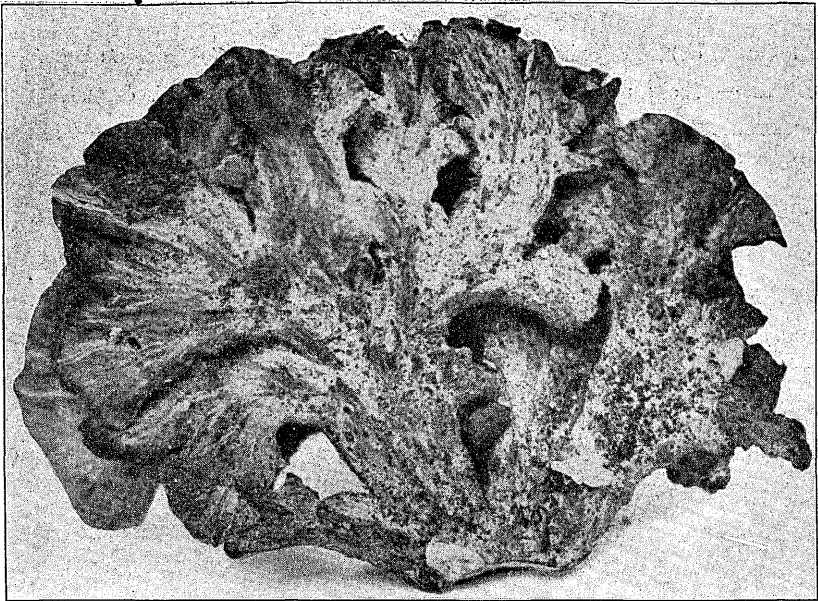


Fig. 1. *Polyporus sulphureus*. ($\times 1/2$).

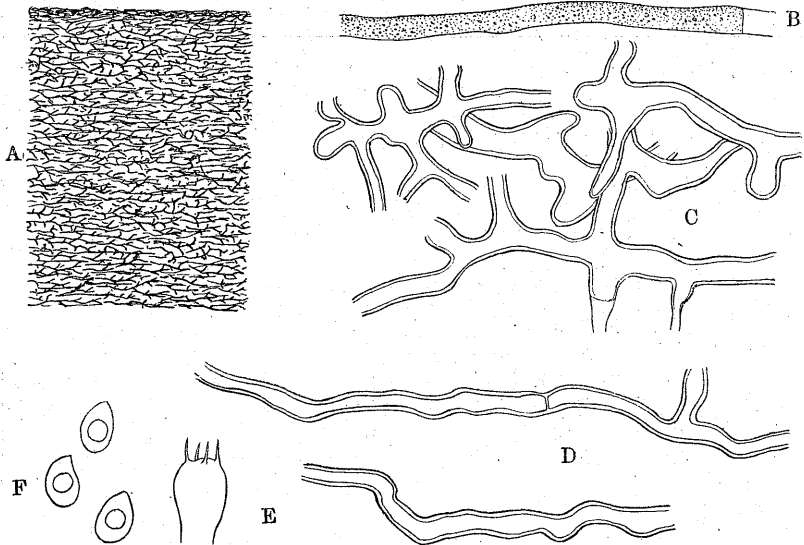


Fig. 2. *P. sulphureus*. A) A radial section through the dorsal portion of the pileus, showing the hyphal arrangement. B) & C) Hyphae in the pileus context. D) Hyphae in the pore trama. E) A basidium. F) Spores. (B-E, $\times 660$; E, $\times 1000$).

1918-Ooue, U.); Tottori pref. (Nov. 1922-TUDA, M., on *Castanopsis cuspidata* SCHOTT.—Sikoku: Ehime pref. (Oct. 1916-KOMATUZAKI, M. & Oct. 1917-KOMATUZAKI, M.)—Kyûsyû: Miyazaki pref. (July 1938-IMAZEKI, R.)—Taiwan: Taihoku (March 1918-HORIKAWA, Y.); Mt. Minamidaibu (Jan. 1920-MATUDA, E.)—Tyôsen (Korea): Keiki pref. (June 1919-UEKI, H.).

22) **Polyporus (Tyromyces) sambuceus** LLOYD, Myc. Writ. IV, Letter, 60: 13, 1915; YASUDA, Tokyo Bot. Mag., XXIX: 420, 1915, in Japanese; TROTTER, SACC. Syll. Fung., XXII: 356, 1925.

Habitat: on dead trunks of various frondose trees.

Type of rot: unexamined.

Japanese name: ますたけ、ほくちたけ、しろかいめんたけ (安田).

Distribution: Japan and Phillippines.

Specimens examined:—Hokkaido: Iburi prov. (Aug. 1933-IMAZEKI, R.)—Honsyû: Iwate pref. (July 1917-WAKAWA, T., Aug. 1920-UEMATU, E., Oct. 1918-WAKAWA, T. & Oct. 1923-TAMURA, M.); Miyagi pref. (Sept. 1908-YASUDA, A., Sept. 1910-YASUDA, A., May, 1913-YASUDA, A., Sept 1914-YASUDA, A.,

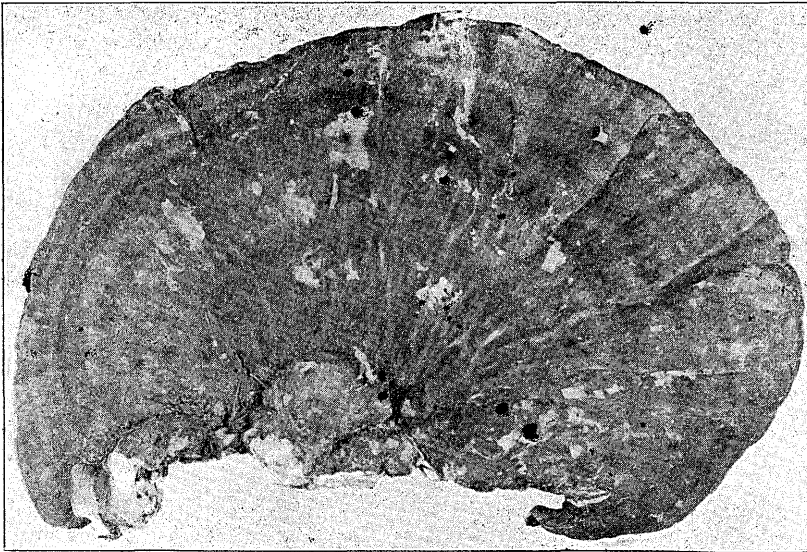


Fig. 3. *Polyporus sambuceus*. ($\times 1/2$).

Oct. 1912-SATO, N. & Aug. 1931-
 IMAZEKI, R.); Hukusima pref. (Aug.
 1918-NARITA & July 1913-HATTORI,
 Y.); Gunma pref. (Sept. 1938-IMA-
 ZEKI, R. & Aug. 1939-IMAZEKI, R.,
 July 1915-TUNODA, K., Dec. 1916-
 TUNODA, K. & Dec. 1911-TUNODA, K.);
 Ibaragi pref. (Aug. 1918-IRIE, Y. &
 Dec. 1917-IRIE, Y.); Saitama pref.
 (Nov. 1923-TERADA, S.); Kanagawa
 pref. (Oct. 1933-OGAWA, T.); Nagano
 pref. (Oct. 1921-TINO, K., Aug. 1923-
 TANAKA, T. & Aug. 1913-OOHINATA,
 Z.); Aiti pref. (Oct. 1911-MATUZAKI, U.); Hyôgo pref. (Aug. 1922-OONE, U.
 & Aug. 1918-MATUZAWA, S.); Tottori pref. (July 1936-NOBUHARA, H., Oct.
 1922-TUDA, M. & Aug. 1914-IKOMA, Y.)—Sikoku: Ehime pref. (Oct. 1916-
 KOMATUZAKI, M. & June 1912-KOMATUZAKI, M.)—Kyûsyû: Hukuoka pref.
 (Oct. 1928-YOSHII, H.); Miyazaki pref. (Aug. 1938-IMAZEKI, R.).

In dried and weathered specimens, *Polyporus sulphureus* and *P. sambuceus*
 so closely resemble each other that the two have frequently been confused by
 Japanese mycologists. For this reason, the writer attempts here to make clear
 the difference between them, as follows :

P. sulphureus.

Pileus polymorphic, sessile to late-
 rally stalked, imbricato-cæspitose.
 Surface of the pileus reddish-yellow,
 orange to pure yellow, pruinose, ano-
 derm.

Context light yellow, soft cheesy,
 exuding a sulphur-yellow milk when
 fresh, becoming whitish, hard, but
 brittle when dried.

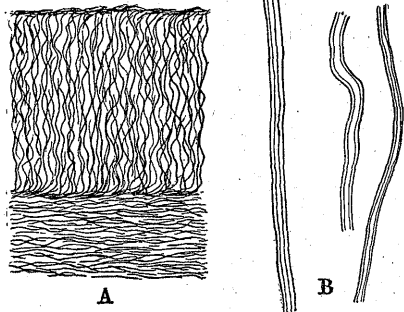


Fig. 4. *Polyporus sambuceus.*

A) A radial section through the dorsal
 portion of the pileus, showing the hyphal
 arrangement. B) Hyphae in the pileus
 context and pore trama. (B, x660).

P. sambuceus.

Pileus sessile, dimidiate, imbricate,
 rarely fan-shaped. Surface of the
 pileus flesh colored, but usually cover-
 ed with a fine cinnamon-brown colored
 pubescence, which later looks as if a
 thin pellicle had grown, owing to the
 pubescence being adpressed and ag-
 glutinated afterward.

Context flesh colored, soft, fleshy ;
 whitish and soft spongy when dried.

Tubes sulphur-yellow, 2-3 mm long; dirty brownish when dried.

Hyphæ in the context 5-13 μ thick, very irregular in shape, richly branched, intricately interwoven. Hyphæ in the pore trama 3-7 μ thick, waving more or less zigzag, much less branched than those in the pileus.

Spores ellipsoid or ovoid, 5-7 \times 3.5-4.5 μ .

Tubes flesh colored, rarely yellowish (?), 3-15 mm long; whitish when dried.

Hyphæ in the pileus context 2-3 μ thick, sparingly branched, almost radially arranged. Hyphæ in the pore trama similar to those in the pileus.

Spores ellipsoid to pip-shaped, 4-5.5 \times 2-2.5 μ .

先づ最初＝筆者ガ日本隠花植物圖鑑 425 頁＝ますたけ *Polyporus sulphureus* トシテ解説シタモノハ該種ト *P. sambuceus* トヲ混同シテ居タコトヲ明記シ訂正スル。即チ同書ノ第 203 圖版ノ中 fig. 1 及ビ 3 ガ *P. sulphureus* デアリ、fig. 2 ハ *P. sambuceus* デアル。又和名ヲあひかははたけト訂正、又記相文中“實質ハ生時鮭肉色”トセルヲ“淡黄色”ト改メル。

是等兩菌＝就テ上記ノ如ク筆者ハ混同シ來ツタノデアルガ、是ハ兩菌ノ乾燥標本殊＝稍、雨露＝曝サレタ子實體デハ外觀上時トシテ區別シ難イコトガアリ、又筆者ノ生品＝對スル見聞ノ不足、*P. sambuceus* ノ原記載ノ不備等＝原因シ、更ニ茸特有ノ多形性＝眩惑サレテ居タ爲デモアル。

扱テ以上ノ如ク兩菌ハ區別サレルガ、コノ内實質内菌絲ノ形態及ビ蓋ノ表層部ノ組織ハ乾燥標本ヲ區別スル場合最モ重要且明瞭ナ區別點ニナル。*P. sambuceus* ノ原記載＝モ安田氏ノ記載＝モ實質及ビ管孔ハ共＝白色トナツテ居ルガ、是ハ乾燥標本＝於テ記サレタモノトシカ考ヘラレナイ。何故ナラバ筆者ノ云フ *P. sambuceus* ノ乾燥標本ハ Co-type 標本(安田氏ヨリ LLOYD ニ送ラレタ標本ハ 4 點アリ、ソノ何レガ Type ニナツテ居ルカ不明デアルガ送付品ノ控ヘハ總テ現存シテ居ル)＝全ク一致スル故、原標本モ生時鮭肉色ノ實質ヲ有センコトハ疑ヲ入レナイ。次＝*P. sulphureus* ノ和名トシテ一般＝通用シテ居ルますたけ(鱒茸)ハ實質ノ色カラ與ヘラレタノデアルガ、*P. sulphureus* ノ實質ノ色ハ外書＝ヨレバ常＝黄乃至淡黄色デ肉色ト云フ言葉ハ見當ラナイ。サレバますたけノ和名ヲ *P. sulphureus* ＝宛デルノハ妥當デナイト考ヘラレル。然シ筆者ガ採集セル *P. sulphureus* ノ幼子實體デ上下ノ表面ハ黄色、實質ハ淡鮭肉色ヲ呈スルモノガアツタ。コノ一例ハ和名ますたけノ處理＝多少ノ障害トナル

ノデアルガ、*P. sambuceus* ノ生子實體ノ實質ガ常ニ鮮明ナ鱗肉色ヲ呈スルコトニ鑑ミますたけノ實體ハ *P. sambuceus* デアルト考ヘル方ガ合理的デアリ、且此和名コソ同菌ニ最モ適當セルモノト云フベキデアル。川村博士ハ *P. sulphureus* ニますたけ・ほくちたけ・ひごけ等ヲ擧ゲテ居ラレルガ後ノ兩名ノ處置ハ如何？筆者ハ未ダほくちトシテ用ヒテ居ル實物ヲ見テ居ナイノデ明言シ得ナイガ、乾燥子實體ノ實質カラ想像シテ、*P. sambuceus* ノ方ガほくちトシテ遙カニ適當シテ居ルカニ考ヘラレルノデ、川村博士ガ列擧サレタ和名ヲ總テ本種ニ宛テルコトトシタ。從ツテ *P. sulphureus* ノ和名ニハあひかはたけ唯一ツヲ採用スル。

23) ***Polyporus calvatioides* IMAZEKI, nom. nov.**

Calvatia versispora LLOYD, Myc. Writ., IV : Lett., 56 : 7, fig. 707, 1915; IV : 548, fig. 750, 1916; V : Lett., 68 : 8, 1918; VI : 1096, 1921; YASUDA, Tokyo Bot. Mag. XXXVIII : 203, 1923, in Japanese; TROTTER, l. c., XXIII : 593, 1925.

Ptychogaster versisporus (LLOYD) LLOYD, l. c., VI : 1005, fig. 1840, 1920.

Pileus solitary or caespitose, semiglobose, globose or applanate, usually forming an irregular compound mass, 3-10-19 cm broad, 2.5-5 cm thick, surface whitish, pale wood-colored or often bright yellow, pruinose, anoderm; context white to yellowish, soft fleshy and watery when young, although the entire content of the pileus soon changes to a brown powdery mass of chlamydospores (secondary spores); pores either lacking or developed on the under surface of the pileus, yellow if present, often rudimentary; spores globose, hyaline, smooth, 4-4.5 μ .

The hyphae in the pileus context are of two kinds, the one thick-walled, 4-15 μ thick, the other thin-walled and full of plasma, both richly branched; chlamydospores subglobose or ovoid, pale yellowish-brown, 5-10 \times 8-10 μ , formed terminally on small branches, branching from thin-walled hyphae, but also formed intercalary.

Habitat : on dead trunks of various frondose trees.

Type of rot : unexamined.

Japanese name : ひらふすべ (安田).

Distribution : Japan, endemic.

Specimens examined :—Honsyû : Ibaragi pref. (Sept. 1918-IRIE, Y. ; Tiba pref. (July 1919-OTAI, E., on *Prunus serrulatus* LINDL.); Tokyô pref. (Sept.

1931-OGAWA, T., July 1936-IMAZEKI, R. & July 1936-NAKAYAMA, M.); Sizuoka pref. (Aug. 1932-IMAZEKI, R.); Hyôgo pref. (Dec.-MATUSIMA, K., Oct. 1918-OOUE, U. & Nov. 1916-MATUZAWA, S.); Wakayama pref. (Aug. 1918-UI, N.); Tottori pref. (Nov. 1922-TUDA, M.)—Sikoku: Ehime pref. (Nov. 1916-KOMATUZAKI, M. & Oct. 1916-KOMATUZAKI, M.)—Kyûsyû: Miyazaki pref. (Oct. 1937-YOSHII, H.).

Among the many Japanese *Polyporus*, the present species is a peculiar fungus. In perfect specimens, the fruitbodies form the normal pores on the under surface, although it is a rather rare case. They are frequently globose or of irregular form, and the whole content of the pileus turns to a powdery mass of chlamydospores, without showing a trace of pores anywhere. Such a puff-ball like specimen was sent by J. UMEMURA to LLOYD, and named *Calvatia versispora* LLOYD, which name LLOYD later changed to *Ptychogaster versisporus*, based on the photograph sent him by A. YASUDA, which showed perfect pores formed on the under surface of the fruitbody. He, however, soon returned to the first name. The writer now places it in its proper systematic position under the new name, *Polyporus calvatioides* IMAZEKI. The combination, *Polyporus versisporus*, is untenable for this species, because it was used previously for other Japanese *Polyporus* by C. G. LLOYD.

The plant has neither capillitium nor peridium as LLOYD had misconstrued, only the normal basidia and basidiospores in the pores. The brown spores formed in the pileus context are merely chlamydospores. Why is it the plant frequently does not form the pore layer? Since in this species, the pores appear at a rather late period in the course of sporophore development, if the context hyphae were to begin to change to chlamydospores at an early stage, the fruitbodies may stop the formation of normal pores by destroying the passage for the nutrient matter necessary to pore formation. Among the many specimens, the writer finds every grade of pore development, from none to perfect. The chlamydospores are formed as shown in Fig. 6, C, which are very similar to those produced in the culture of *P. sulphureus*. Beyond this, there may also be formed intercalary chlamydospores.

The writer believes that this species closely approaches to *P. sulphureus*, although they should be regarded as two distinct species.

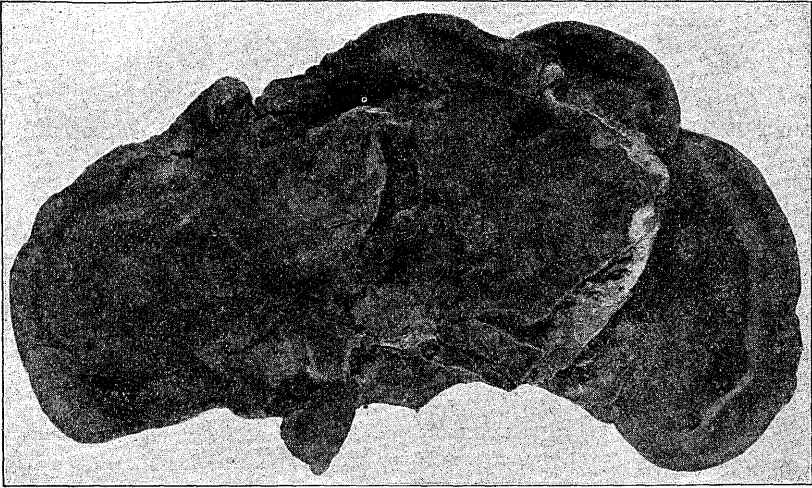


Fig. 5. *Polyporus calvatioides* ($\times 2/3$).

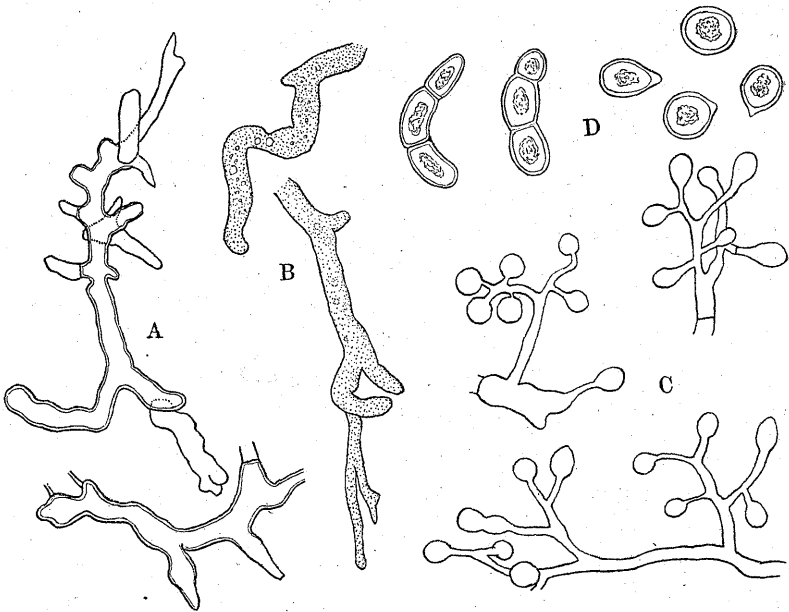


Fig. 6. *Polyporus calvatioides*. A) & B) Hyphae in the pileus context of young sporophore. C) Young secondary spores (chlamydospores). D) Matured chlamydospores. (A-D, $\times 660$).

本菌ハ現在迄日本以外デハ發見サレテ居ナイノデ、2, 3 ノ菌學者ノ注目ヲ惹イタノミデアルガ、命名者 LLOYD 及ビ故安田氏ハ其ノ所屬即チ *Gasteromycetes* ノ菌カ或ハ *Polyporaceae* ノモノカト云フ問題デ惱マサレタモノデアル。LLOYD ハ最初梅村甚太郎氏カラノ送品ニ基キ *Calvatia versispora* LLOYD ナル新名ヲ與ヘタガ、其後 *Ptychogaster versisporus* LLOYD ト改メ、更ニ再び最初ノ名ニ戻シタ。何故ニ斯カル于余曲折ガアツカト云フニ、本菌ハ *Polyporus* デアルニモ拘ラズ子實體ノ實質内容ハ成熟後全ク厚膜胞子ト化シ、乾燥セル標本ハ恰モにせしやうろ科ノこつぶたけ *Pisolithus tinctorius* (PERS.) COKER et COUCH ノ乾燥標本ノ如ク、表面ハ崩レテ内部ノ褐色ノ粉塊ヲ出スノデアル。而モ往々ニシテ *Polyporus* タルベキ管孔ハ形成サレナイデ終ルノデアル。然ルニ安田氏ヨリ本菌ノ美事ニ發育シタ子實體ノ寫眞ヲ送付サレタ LLOYD ハ其處ニ完全ナ管孔ガ形成サレテ居ルヲ見、前記ノ如ク *Ptychogaster* ニ所屬ヲ變更シタ。彼ハ最初カラ本菌ガ *Calvatia* トシテハ正規ナ *capillitium* ガ見出サレナイト云フ點ニ多大ノ疑ヲ懷イテ居タ。*Ptychogaster* 屬ハ厚膜胞子ヲ形成スル多孔菌科ノ1屬デアル。然ルニ其後 LLOYD ハ *Peridium* ト *Capillitium* トヲ見出シタトテ再び最初ノ通り *Gasteromycetes* ニ戻シタ。

LLOYD ニ送ラレタ標本ガ常ニ完全ナ管孔ヲ持ツテ居ナカツタコトハ不幸デアツタ。然シ本菌ニハ時ニ管孔ヲ形成シ、時トシテハ全クソノ痕跡サヘモ現ハサナイト云フ奇妙ナ性質ガアル。カハル現象ガ何故ニ起ルカハ實驗的ニ調べテ居ナイガ、筆者ハ是ヲ次ノ如ク解釋シタイ。即チ管孔ハ子實體ガ相當程度迄發育シテカラ形成サレル。然ルニ實質ノ菌絲ガ厚膜胞子化スル時期ガ早目ニ起ルト管孔ノ形成ハ中止サレル。ソレハ養分ノ通路タル菌絲ガ變形スルカラデアラウ。勿論是ハ單ナル推量デアルカラ果シテ當ヲ得テ居ルカドウカ。管孔ノ形成ガ遅イト云フコトハ明カデ、多數ノ標本中ニハ全ク是ヲ缺クモノ、或ハ極メテ痕跡的デ一見 *Poria* 屬ノ他種菌ガ寄生シテ居ルカノ觀ヲ呈スル場合、又ハ完全ナ *Polyporus* 狀ノモノ等ノ種々ナ段階ガ認めラレル。

子實體ハ略々白色、汚黄白色、淡材色乃至鮮黄色等ヲ呈シ、ソノ他種々ナ點デ *P. sulphureus* ニ極メテ近縁ナルモノデアル。本菌ノ厚膜胞子形成ハ若イ子實體デ觀察スルト Fig. 6. C ニ示ス如クデ、ソノ狀態ハ *P. sulphureus* ノ培養基上ニ於ケル厚膜胞子(第2胞子)ニ酷似シ、細イ短柄ニ頂生スル。然シ完熟シタ標本デハ内部ニ僅カノ菌絲ヲ殘スノミデ、殆ド全ク胞子化スル點ヨリシテ、菌絲自體ガ細カ仕切レテ連鎖狀ニ厚膜胞子化スルコトモアルデアラウト考ヘラレル。

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